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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,742	10/10/2006	Yasushi Kurisu	187659/US-465122-00024	2482

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Dorsey & Whitney
Intellectual Property Department
250 Park Avenue
New York, NY 10177

EXAMINER	
SULLIVAN, DEBRA M	
ART UNIT	PAPER NUMBER
3725	
MAIL DATE	DELIVERY MODE
08/18/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,742	KURISU ET AL.	
	Examiner	Art Unit	
	DEBRA M. SULLIVAN	3725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-38* is/are pending in the application.

4a) Of the above claim(s) *17-28 and 34-38* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *29-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/GB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *JP 03118907A*.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 29, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent # 6,539,765) in view of Tamada et al (JP Patent 06-210370). Gates discloses an apparatus for press molding a heated metal plate material [see col. 5 lines 7-10], the apparatus comprising a supply piping arrangement (36, 37) provided in a mold (8, 9) and configured to interact with a cooling medium [see col. 5 lines 22-23], ejection holes (opening at the exit of supply piping) providing in a molding surface of the mold (8, 9) and configured to interact with the cooling medium, the supply piping and the ejection holes communicating with one another [see col. 5 lines 22-31; figure 2]. Gates discloses the invention substantially as claimed except for wherein the apparatus comprises of a plurality of projections provided on a portion of part of the molding surface of the mold. However, Tamada et al teaches of providing a plurality of projections (located adjacent to each recess) on at least one portion of part of the molding surface of a mold (2) wherein the plurality of projections have an area ratio between 1% and 90%, a diameter between 18 μm and 120 μm and a height between 1 μm and 10 μm in order to prevent the formation of defects on the work piece during the pressing operation [see paragraph 0013 of translation]. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Gates to include a plurality of

projections as taught by Tamada et al for the purpose of preventing the generation of forming defects on the work piece during the pressing operation.

In reference to claim 32, Gates further discloses the apparatus comprising of a discharge piping arrangement (42, 43) provided in the mold (8, 9) and configured to interact with the cooling medium [see col. 5 lines 22-25] and discharge holes (opening at the entrance of the discharge piping) provided in the molding surface of the mold (8, 9) and configured to interact with the cooling medium, wherein the discharge piping arrangement (42, 43) and the discharge holes communicate with one another [see col. 5 lines 22-31]; figure 2.

In reference to claim 33, Gates further discloses the apparatus comprises of a cooling piping arrangement (39, 40) provided in the mold (8, 9) [see col. 5 lines 22-24; figure 2].

2. Claims 29 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sudo et al (JP Patent 2002-282951) in view of Tamada et al. Sudo et al discloses an apparatus for press molding a heated metal plate material, the apparatus comprising of a supply piping arrangement (see paragraph 0024 of translation) provided in a mold and configured to interact with a cooling medium and ejection holes (11) provided in a molding surface of the mold (2) and configured to interact with the cooling medium, the supply piping and the ejection holes (11) communicating with one another [see paragraph 0024]. Sudo et al discloses the invention substantially as claimed except for wherein the apparatus comprises of a plurality of projections provided on a portion of part of the molding surface of the mold. However, Tamada et al teaches of providing a plurality of projections (located adjacent to each recess) on at least one portion of part of the molding surface of a mold (2) wherein the plurality of projections have an area ratio between 1% and 90%, a diameter between 18 μm and 120 μm and a height between 1 μm and 10 μm in order

to prevent the formation of defects on the work piece during the pressing operation [see paragraph 0013 of translation]. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Sudo et al to include a plurality of projections as taught by Tamada et al for the purpose of preventing the generation of forming defects on the work piece during the pressing operation.

In reference to claim 32, Sudo et al further discloses a discharge piping arrangement (12a) provided in the mold (2) and configured to interact with the cooling medium and discharge holes (openings at the entrance of the discharge piping) provided in the molding surface of the mold (2) and configured to interact with the cooling medium, wherein the discharge piping arrangement (12a) and discharge holes communicate with one another [see paragraph 0024].

3. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Gates in view of Tamada et al or Sudo et al in view of Tamada et al as applied to claim 29 above, and further in view of Yamagata et al (US Patent 4,945,381). The combination of Gates and Tamada et al or Sudo et al and Tamada et al discloses the invention substantially as claimed except for wherein the projections is a chrome-plated layer with a thickness between 10 μm and 80 μm. However, Yamagata et al teaches of providing a chrome-plated layer having a thickness of 40 μm on a surface of a mold in order to improve wear resistance and damage resistance [see col. 18 lines 27-34]. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the plurality of projections to include a chrome-plated layer having a thickness of 40 μm as taught by Yamagata et al for the purpose of improving wear and damage resistance of the projections.

4. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Gates in view of Tamada et al or Sudo et al in view of Tamada et al as applied to claim 29 above, and further in view of Mikahara (JP 03118907A). The combination of Gates and Tamada et al or Sudo et al and Tamada et al discloses the invention substantially as claimed except for wherein at least one ejection hole is provided solely in a portion of the molding surface where a heat transfer coefficient between the metal plate material and the mold is at most about 2000 W/m^2k. However, Miyahara teaches of cooling a portion of a die based on a heat transfer coefficient in that area. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to place at least one ejection hole in a portion of the mold where a heat transfer coefficient is high. It is further noted that the specific amount of heat transfer coefficient is based on the type of material used and the type of material the mold is made of however based on the teaching of Miyahara, the apparatus made by the combination of either Gates in view of Tamada et al and Miyahara or Sudo et al in view of Tamada et al and Miyahara would have at least one ejection hole placed in the mold in an area where the heat transfer coefficient is about 2000 W/m^2k since this is considered to be a high heat transfer coefficient.

Pertinent Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP Patent 06-182457 to Nishiyama discloses an apparatus for press molding a heated metal plate material having a supply piping arrangement and ejection holes that communicate with the supply piping arrangement.

Response to Arguments

Applicant's arguments filed March 31, 2010 have been fully considered but they are not persuasive. Applicant argues that Tamada does not teach or suggest a plurality of projections having an area ratio between about 1% and 90%, a diameter or circumcircle diameter between about 10 μm and 5 mm, and a height between about 5 μm and 1 mm.

The examiner respectfully disagrees. Tamada teaches of providing a plurality of recess (it is inherent that the recess along a surface will create projections) on a part of all of the die, therefore claimed range of 1% to 90% is within the range disclosed by Tamada. Tamada further teaches the plurality of projections have a diameter between 18 μm and 120 μm and a height between 1 μm and 10 μm [see Abstract]. Therefore the combination of Tamada with either Gates or Sudo et al discloses the claimed invention and the rejection is deemed proper.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Debra Sullivan whose telephone number is (571) 272-1904. The examiner can normally be reached Monday - Friday 8am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dana Ross can be reached at (571) 272-4480. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Debra M Sullivan/
Examiner, Art Unit 3725